

XXII. *Characters of New Species of Exotic Trichoptera ; also of one New Species inhabiting Britain.* By R. M'LACHLAN, Esq., F.L.S.

[Read 6th January, 1862.]

THE exotic species here described are for the most part contained in the national collection, and are natives of China, Australia and New Zealand.

It has been found necessary to construct several new genera for the reception of species, which, even with the most liberal ideas as to the elasticity of generic characters, will not fit satisfactorily into any already existing genus. This is but an effect of the meagre knowledge we possess of insects of this order from distant quarters. When the wide diversity from European forms exhibited in exotic insects of other orders is taken into consideration, it is not surprising that these should present equal differences, almost unknown as they at present are.

With respect to the geographical distribution of *Trichopterous* families, one very remarkable fact strikes the observer, viz. that apparently no species belonging to the two great families *Phryganeidæ* and *Limnephilidæ* are found south of the equator; certainly none have yet been described. These appear to have their metropolis in the cold and temperate regions of the northern hemisphere, and decline in numbers as we proceed south, till in the tropics they are very few, and at the equator seem to disappear entirely. That some may yet be discovered is of course possible, but taking into consideration that they are usually insects of large size, likely to attract attention, I think it certain that if they be not altogether wanting, they must be very scarce.

Fully as many more undescribed exotic species from the old world are contained in the national collection, and a considerable number from North and South America, but as a synopsis of the American *Neuroptera* (including the *Trichoptera*) by Dr. Hagen is on the eve of publication by the Smithsonian Institution,* the determination or description of these latter must be deferred till its appearance.

* This Work has since been published, and contains descriptions of 150 species of North American *Trichoptera*, and a catalogue of 23 species from South America.

Family PHRYGANIDÆ.

Genus COLPOMERA, n.g.

Male.—Antennæ scarcely so long as the wings, broad, laterally compressed, basal joint very short; head elongated and attenuated posteriorly; eyes prominent, slightly prolonged posteriorly; maxillary palpi with the basal joint very short, three succeeding joints longer, of equal length, the lower side very concave; labial palpi with the first and second joints short, broad, concave below, somewhat pyriform, terminal joint elliptical and longer than the others; prothorax very short; mesothorax oval-elongate, rather angular at the sides; thighs with a deep groove on the inner side, smooth; tibiæ and tarsi strongly spinose, spurs 2.4.4.

Anterior wings sparingly clothed with very short hairs, the costa slightly arched; hind margin very oblique, with three sinuations; the first commencing immediately below the apex, and with the second short, the third long, reaching to the anal angle; veins strong, not differing materially in their arrangement from *Phryganea*, posterior wings with the apex produced and obtusely rounded.

The sinuated hinder margin of the anterior wings will alone readily distinguish this genus.

C. sinensis.

Mas.—Antennis nigris; palpis ochraceis, articulis ultimis nigris, capite oculisque testaceis, his nitidis, obsolete nigro-punctatis; thorace fusco; abdomine brunneo-ochraceo; pedibus testaceis, tibiis serie duplici nigro-maculatis; alis anticis pallide testaceis, confertim fusco-reticulatis et nebulosis, venis apicalibus late fusco-marginatis; posticis aurantiacis, apicibus fuscis.

Long. corp. $9\frac{1}{2}$ lin.; exp. alar. 24 lin.

Male.—Antennæ black; palpi ochreous, the terminal joint of both pairs black; head testaceous, sparingly clothed with short, grey hairs; eyes shining, minutely spotted with black; collar clothed with long grey hairs directed backwards; thorax brownish; abdomen brownish-ochreous; legs testaceous, tibiæ with two rows of black spots, from each spot springs a spine, tips of the tibial and tarsal joints blackish; anterior wings yellowish-brown, thickly reticulated and clouded with fuscous, the terminations of the apical veins broadly margined with fuscous, a conspicuous pale

spot at the base of the third apical cell, veins dark fuscous, the anastomosis at the base of the fourth apical cell, and at the arculus, as well as the thyridium, hyaline, when viewed against the light; posterior wings deep orange, the tips broadly fuscous.

Habitat, North China. In the British Museum.

Fam. SERICOSTOMIDÆ.

Genus *ÆCONESSUS*, n. g.

Male.—Antennæ about the length of the wings, basal joint short, and rather thick, not so long as the head; head quadrate; maxillary palpi oval-elongate, much swollen, curved up in front of the head, their apices, viewed from above, appearing as two rounded tubercles between the antennæ, moderately hairy; labial palpi with the basal joint short, second and third of equal length, long; anterior tibiæ with two short spurs, intermediate and posterior, each with four long unequal spurs.

Anterior wings rather short and broad, very slightly hairy, the costa much arched, apical margin almost straight; the costa from the base to the pterostigma is narrowly folded inwards; discoidal cell long and narrow, the *ramus thyrisifer* does not fork before the anastomosis, and from this cause there are only eight apical cells; the anastomosis is complete and very oblique from the third apical cell, the lower part is not connected with the inner margin by a transverse vein, and the last apical cell is continued from the apex to near the base of the wing, the apical portion being very broad; near the base of the third apical cell in all four wings is a small round hyaline spot; posterior wings broad, folded; discoidal cell short and triangular.

This genus, although very characteristic of the family, differs in a marked degree from all others. The anomalous arrangement of the venation is somewhat extraordinary, even in this family, where singularity of structure appears to be the rule.

Æ. Maori.

Mas.—Antennis pallide-ochraceis; oculis nigricantibus vix orichalceo-reticulatis; capite, thorace, abdomineque rufo-brunneis; pedibus rufo-ochraceis; alis anticis ferrugineo-brunneis, confertim albido-irroratis, maculis elongatis ad marginem dorsalem albido et brunneo alternatis; posticis sub-hyalinis, brunneo-tinctis.

Long. corp. $3\frac{1}{2}$ lin.; exp. alar. 10 lin.

Male.—Antennæ pale ochreous; eyes blackish, slightly reticulated with brassy; head, thorax and abdomen reddish-brown; legs reddish-ochreous; anterior wings rusty-brown, thickly irrorated with whitish spots, which are larger towards the base; on the inner margin are three elongated whitish spots, alternating with others of the dark ground-colour; posterior wings sub-hyaline, tinged with brownish.

Habitat, New Zealand.

This insect, at first sight, has a somewhat deceptive resemblance to *Hydropsyche fimbriata*.

Fam. HYDROPTILIDÆ.

Genus HYDROPTILA, Dalman.

H. albiceps.

Mas.—Antennis griseis, obsolete fusco-annulatis; capite dense cano-piloso; pedibus pallide griseis; abdomine infra argentato; alis anticis saturate griseo-fuscis, pallide irroratis, apicibus manifeste albis; posticis pallide griseis.

Long. corp. 1 lin.; exp. alar. $2\frac{1}{4}$ lin.

Male.—Antennæ grey, faintly annulated with darker; head clothed with dense greyish-white pubescence; thorax fuscous; abdomen brown above, silvery beneath; legs pale grey; anterior wings dark greyish-fuscous, irrorated with pale grey, the extreme apex conspicuously whitish; posterior wings pale grey, the cilia concolorous.

Habitat, New Zealand. In Mr. Dale's collection.

Family LEPTOCERIDÆ.

Genus ASCALAPHOMERUS, Walker.

I have followed Mr. Walker in placing this extraordinary genus in the above family, but the robust form and almost clavate antennæ of the typical species ill accord with the slender and delicate insects on which the family was first founded.

A. finitimus.

Mas.—Antennis haud crassatis, nigris; palpis nigro-pilosis; oculis magnis supra approximatis, brunneo-ochraceis; thorace nigro, utrinque rufo-piloso; abdomine saturate piceo; femoribus piceis, tibiis tarsisque brunneo-ochraceis; alis anticis et posticis glabris, semi-pellucidis, fuliginis, venis sub-costalibus saturatioribus.

Fœm.—Antennis gradatim crassatis ; capite rufo-piloso ; oculis haud approximatis ; pedibus omnino saturate piceis.

Long. corp. 6 lin. ; exp. alar. 17 lin.

Male.—Antennæ black, of nearly uniform thickness throughout ; palpi clothed with long, blackish hairs ; eyes large, approximating above, brownish-ochreous ; thorax black, with a tuft of red hairs on each shoulder ; abdomen dark piceous ; thighs piceous ; tibiæ and tarsi brownish-ochreous ; anterior and posterior wings glabrous, semi-pellucid, smoky fuscous ; sub-costal vein very strong and dark in all the wings, the others scarcely darker than the membrane.

Female.—Antennæ gradually thickened before the apex ; eyes small, distant ; head with a tuft of red hairs on the vertex ; legs entirely piceous ; otherwise similar to the male.

Habitat, North China. In the British Museum.

Differs from the only other described species—*A. humeralis*, Walk.—in its somewhat smaller size, naked and more pellucid wings, and especially by the antennæ of the male not being thickened. In *humeralis* they are thickened in both sexes, but the antennæ of the female are shorter and stouter than in the male in both species.

Genus PSEUDONEMA, n. g.

Female.—Antennæ much longer than the wings, joints cylindrical, the basal joint long and thick ; maxillary palpi hairy, basal joint short, 2nd and 3rd long, of equal length, 4th scarcely so long as the 3rd, and less robust ; terminal joint as long as the 3rd and 4th united, flexible ; labial palpi with the terminal joint long and thin ; head sub-triangular ; eyes prominent ; abdomen robust ; leg-spurs 2. 2. 3 ; anterior wings rather thickly clothed with short hairs, long, narrow, slightly dilated at the apex, which is elongated ; discoidal cell broad ; 1st apical cell much longer than the rest ; 2nd short, scarcely reaching halfway to the anastomosis ; 5th narrow and very acute, barely reaching the anastomosis ; posterior wings folded.

This genus, which has much general resemblance to *Leptocerus*, may be at once distinguished therefrom by the tricalcarate posterior tibiæ, and by the robust abdomen.

P. obsoleta.

Fœm.—Antennis fuscis, subtiliter griseo-annulatis ; palpis griseo-fuscis ; capite thoraceque testaceis ; abdomine griseo-brunneo ;

pedibus griseis, tibiis tarsisque nigricantibus; alis anticis canis; punctis nebulisque saturate griseis; posticis opacis albidis vix iridescentibus.

Long. corp. 6 lin.; exp. alar. 17 lin.

Female.—Antennæ fuscous, narrowly annulated with pale grey; palpi greyish-fuscous; head and thorax testaceous, the meta-thorax paler; abdomen greyish-brown; legs grey, tibiæ and tarsi blackish; anterior wings very pale grey, clouded and irrorated with dark grey; the most conspicuous markings are an oblique, almost obsolete, transverse fascia before the middle, and an indistinct blotch at the pterostigma; posterior wings semi-opaque, whitish, slightly iridescent.

Habitat, New Zealand. In Mr. Dale's Collection.

GENUS LEPTOCERUS, Leach.

L. cognatus.

Antennis saturate brunneis, apicibus articulorum albis; palpis nigris pilis longis griseis; capite thoraceque testaceis; abdomine brunneo; pedibus pallide griseo-ochraceis; alis anticis griseis, parce cano-pilosis; posticis hyalinis, cupreo-iridescentibus.

Long. corp. $4\frac{1}{2}$ lin.; exp. alar. 14 lin.

Antennæ dark brown, with white tips to the joints, basal joint of the same colour as the head; palpi black, clothed with long grey hairs; head and thorax testaceous; abdomen brown; legs pale greyish-ochreous; anterior wings grey, sparingly clothed with hoary pubescence; posterior wings hyaline, with coppery iridescence.

Habitat, Auckland, New Zealand. Collected by Col. Bolton. In the British Museum.

L. canescens.

Antennis nigris albo-annulatis, apicis parte tertiâ omnino albâ; palpis nigris, pilis longis griseis; capite thoraceque testaceis; abdomine pallidiore; pedibus pallide ochraceis; alis anticis canis, griseo-irroratis; posticis hyalinis.

Long. corp. 5 lin.; exp. alar. 13—15 lin.

Antennæ black, annulated with white, the apical third entirely white; palpi black, with long grey hairs; head and thorax testaceous, abdomen paler; legs pale ochreous; anterior wings hoary,

irrorated with grey, especially towards the apex; posterior wings hyaline.

Habitat, Australia. In the British Museum.

Closely allied to the preceding; differs in its slightly larger size, more hoary anterior wings, and in the posterior wings wanting the cupreous iridescence.

These two species, with *L. magnus*, Walker, and *L. oppositus*, Walker, from Tasmania, form a group apparently peculiar to Australia and New Zealand.

L. exiguus.

Antennis albidis; basim versus subtiliter nigro-annulatis; oculis fuscis; capite thoraceque ferrugineis; abdomine saturatiore; pedibus pallide albido-ochraceis; alis anticis vix pellucidis, pallide fulvo-pilosis, venis ochraceis, posticis pallidioribus.

Long. corp. 3 lin.; exp. alar. $7\frac{1}{2}$ lin.

Antennæ whitish, with an ochreous tinge, in the basal third finely and distantly annulated with black; eyes brownish-black; head and thorax ferruginous; abdomen darker; legs pale whitish-ochreous; anterior wings somewhat transparent, not very thickly clothed with tawny hairs, veins ochreous; posterior wings more transparent, beautifully iridescent, reflecting various colours.

Habitat, Australia (Moreton Bay.)

GENUS MACRONEMA, Pictet.

M. hospita.

Antennis fuscis; articulo basali ochraceo; capite nigro, nitido, maculis duabus inter oculos rufo-ochraceis; thorace nitido, nigro, collare rufo-ochraceo; abdomine griseo-brunneo; pedibus pallide fulvis; alis anticis fuligineo-fuscis, strigâ basali furcatâ, maculis tribus magnis costalibus, una ad apicem, altera ad angulum analem, tertia marginem dorsalem versus albo-hyalinis; posticis hyalinis, iridescentibus, apicibus fuscis.

Long. corp. 5 lin.; exp. alar. 15 lin.

Antennæ brown, blackish towards the apex and base, basal joint reddish-ochreous; head shining black, with two reddish-ochreous raised spots between the eyes; thorax shining black, collar and shoulders reddish-ochreous; abdomen greyish-brown; legs pale fulvous; anterior wings smoky-fuscous, with whitish hyaline markings, viz., a furcate streak from the base, three large spots

on the costa, the last of which reaches nearly across the wing and expands at the end, one in the apex, one at the anal angle, and one towards the inner margin, with a prolongation towards the base; posterior wings hyaline, iridescent, apex dark fuscous.

Habitat, Shanghai, North China. Collected by Mr. Fortune. In the British Museum.

M. lauta.

Antennis bases versus crassis, breve nigro-pilosis, aliter ochraceis; palpis ochraceis articulo quarto nigricante; capite thoraceque nitidis purpureo-fuscis; pedibus testaceis, tibiis tarsisque externe fuscis; alis anticis saturate purpureo-fuscis, nitidis, strigâ basali, strigis costalibus tribus, maculisque duabus marginem dorsalem versus, albo-hyalinis; posticis albo-hyalinis, apicibus late fuscis.

Long. corp. 5 lin.; exp. alar. 15 lin.

Antennæ, for the space of half an inch from the base, thickened, and clothed with short black hairs, the rest ochreous; palpi bright ochreous, the fourth joint tinged with fuscous; head and thorax shining, purplish fuscous; legs testaceous, tibiæ and tarsi externally fuscous, spurs fuscous; anterior wings shining dark purplish fuscous, with whitish hyaline markings, viz., a short streak from the base, three streaks placed close together from the costa, of which the middle is the longest, the outer ones slightly convergent, and two large spots, scarcely touching the inner margin, placed opposite to the two outside costal streaks; posterior wings whitish hyaline, the tips broadly fuscous.

Habitat, Hong Kong. Collected by J. C. Bowring, Esq. Three specimens in the British Museum.

The thickened antennæ noticed in this species are observable in a slight degree in several others, but not to the same extent.

M. Australis.

Monopseudopsis inscriptus, Walker, British Museum Catalogue of *Neuroptera*, pt. 1, p. 105.

The single type of this insect, on which Mr. Walker founded his genus *Monopseudopsis*, is in very bad condition, and is evidently a *Macronema* of the same group as *M. hospita*, *M. zebra-tum*, Hag., *M. sepultum*, Hag., *M. lauta* and *M. (Hydropsyche) multifaria*, Walker, and is closely allied to the two first. All these, in common with the insect now under consideration, are distinguished by the presence of whitish hyaline markings on a dark

ground. I believe Mr. Walker is now of opinion that his genus had better be sunk and the species merged into *Macronema*, and, as a *M. inscripta* is already described from Sierra Leone, I have changed the name to the above. The species inhabits Australia.

Family HYDROPSYCHIDÆ.

Genus HYDROPSYCHE, Pictet.

H. fimbriata.

Mas et Fœm.—Antennis pallide ochraceis, brunneo-annulatis; capite thoraceque rufo-brunneis; abdomine supra nigricante; pedibus ochraceis; alis anticis fulvo-ochraceis, apicem versus saturatoribus, maculis numerosis pallidioribus, maculis elongatis ad marginem dorsalem saturate fulvis et albido-hyalinis alternatis, marginibus apicalibus distincte albido-fimbriatis; posticis flavido-pilosis.

Appendicibus analibus inferioribus maris articulis ultimis longissimis, acutis, sursum incurvatis, approximatis; pene pallido, ante apicem infra calloso, apice tumido rufo-brunneo.

Long. corp. 4 lin.; exp. alar. $10\frac{1}{2}$ lin.

Male and Female.—Antennæ pale ochreous, annulated with dark brown; eyes varied with brown and black; head and thorax reddish brown; abdomen blackish above; legs ochreous; anterior wings tawny ochreous, much darker towards the apex, with numerous small pale spots; several of these are larger towards the base, on the inner margin elongate pale spots alternate with the dark ground-colour, fringe of the apical margin conspicuously yellowish white; posterior wings clothed with clay-coloured hairs.

Inferior anal appendages in the male with very long terminal joints, which are pointed and curved upwards, approximating at the tips; penis pale, with a callosity before the apex beneath, apex dark red, tumid.

Habitat, New Zealand. In the British Museum.

The following new species inhabits Britain:—

Family RHYACOPHILIDÆ.

Genus RHYACOPHILA, Pictet.

R. munda.

Mas.—Antennis brunneis flavo-annulatis; palpis brunneis; oculis nigris, ocellis distincte flavido-albis; capite pallide

fusco sparse aureo-piloso ; thorace abdomineque supra piceo-brunneis, his segmento ultimo appendicibusque testaceis ; pedibus pallide ochraceis, tibiis tarsisque anterioribus et intermediis nigro-annulatis ; alis anticis ad apicem vix rotundatis, aureo-brunneis cinereo-irroratis, fasciâ apicem versus cinereâ, basim versus maculis duabus argenteis, venis cubitalibus nigris ; posticis griseo-flavis, pterostigmate pallide brunneo.

Appendicis analis segmento ultimo lobi brevis abrupti lati formâ suprâ educto ; appendicibus inferioribus longissimis, ad apicem profunde bifidis.

Long. corp. 4 lin. ; exp. alar. 11 lin.

Male.—Antennæ brown, annulated with yellow ; palpi brownish ; eyes black, ocelli conspicuously yellowish white ; head pale fuscous, sparingly clothed with golden hairs ; thorax pitchy brown, clothed with golden hairs in the middle ; abdomen above dark pitchy brown, last segment and appendages testaceous ; legs pale ochreous, anterior and intermediate tibiæ and tarsi annulated with black : anterior wings somewhat rounded at the apex, golden-brown, with scattered ashy-grey spots, a curved ashy-grey fascia arises at the anal angle and reaches two-thirds across the wing ; from the costa, near the apex, springs a short band, which sometimes unites with the fascia, forming a somewhat interrupted band across the wing, towards the base are two silvery spots, with a black spot between them ; veins of the cubitus conspicuously blackish, a row of faint fuscous spots round the apical margin, ciliæ golden-yellow ; posterior wings greyish-yellow, pterostigma and the extremity of the apical veins brownish.

Upper margin of the last abdominal segment produced in the middle into a short broad lobe, with a depression in the centre, the margin cut off very abruptly ; appendices superiores almost concealed under the lobe, small, dilated at the apex, which is emarginate ; appendices inferiores very long, basal joint very broad, the margins turned inwards ; terminal joint deeply but unequally cleft at the apex, the forks not divaricating ; penis sheaths curved upwards and approximating.

Of this pretty species I captured eight specimens (all males) at Shaugh Bridge, near Bickleigh, Devon, on the 16th Sept. 1861.

Wishing to be sure, before venturing to describe it, that it was not already known on the Continent, I sent specimens to Dr. Hagen, and he considers it to be altogether new. In the furcate inferior appendages it partially agrees with *R. venusta*, Pict. MS.,

and *R. aurata*, Brauer. In the first the points of the fork are parallel and very distant, in the latter very unequal and divergent. In the form of the prolongation from the last abdominal segment, and in its general characters, it differs very much from any recorded species, and forms a transition between the group of *R. aurata* and two at present undescribed species noticed in Stett. Entomol. Zeitung, 1859, p. 154.

XXIII. *Description of a New Genus and Species of Noctuides.* By FRANCIS WALKER, Esq., F.L.S.

[Read 3rd March, 1862.]

THE Lepidopterous insect here described appears to be unique; it was discovered upon a fence at Halifax, in Nova Scotia, by B. Piffard, Esq., and was presented by him to the British Museum.

Fam. GLOTTULIDÆ, Guen.

Genus PHORNACISA, n. g.

Fœm.—Corpus pilosum, crassum. Proboscis robusta. Palpi spissi, pilosi, oblique ascendentes, frontem non superantes; articulus 3us conicus, minimus. Antennæ glabræ, sat robustæ. Abdomen longiconicum, alas posticas sat superans. Pedes robusti, pilosi; tarsi spinosi. Alæ sat angustæ; anticæ apice rotundatæ, costa recta, margine exteriore sub-convexo sub-obliquo.

Female.—Body pilose, very stout. Proboscis robust, moderately long. Palpi thick, pilose, obliquely ascending, not rising so high as the front; 3rd joint conical, very short. Antennæ smooth, rather stout. Abdomen thick, elongate-conical, extending some distance beyond the hind-wings. Legs robust, pilose; hind-tibiæ with four moderately-long spurs; tarsi spinose. Wings rather narrow. Fore-wings rounded at the tips; costa straight; exterior border slightly convex and oblique; interior angle much rounded; underside with a thin fringe of long hairs in the discal areolet; 2nd inferior vein as far from the 1st as from the 3rd; 3rd about thrice further from the 4th than from the 2nd.